BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An Open Forum for brief discussions of the workaday problems of the bedside doctor. Suggestions of subjects for discussions invited.

MASKED HYPERTHYROIDISM IN ELDERLY INDIVIDUALS, A FREQUENTLY OVERLOOKED CONDITION

SYMPTOMS

R. MANNING CLARKE, M. D. (1219 Hollingsworth Building, Los Angeles.)—The usual case of hyperthyroidism has a well-defined syndrome, is quickly recognized, and may be just as promptly given the correct treatment. This discussion is concerned with the unusual case that often escapes correct diagnosis. It is marked by the fact that some of the cardinal symptoms do not present themselves. When exophthalmus and thyroid tumor do not show, the clinician is often misled, and the disease masquerades as some other entity, like heart or gastro-intestinal disease. Both the internist and the surgeon frequently miss these cases, and they fail of receiving the proper treatment because of the failure of correct diagnosis. This masquerading is especially prone to occur in the elderly patient.

Masked as Heart Disease.—Heart Failure.—Heart failure is a favorite disguise. It is a disease that is now expected frequently in the patient of middle age and beyond. In the absence of exophthalmus and thyroid enlargement, the failing heart is put at rest and given digitalis, and the physician is very much surprised to find that the response is disappointing. The rate is not sufficiently slowed and the patient is still ill. Auricular fibrillation is common in a failing heart, and its failure to be benefited by rest and digitalis is puzzling until the correct diagnosis is reached.

Failure of the rate to slow under rest and digitalis should always make the clinician suspicious. This is especially true if the heart is fibrillating, and still more so if the fibrillation is paroxysmal. Normally, the rate should come down to 60 or 80 under this type of management. If it cannot be reduced to below 100, hyperthyroidism should be suspected. Lugol's solution should then be administered as a therapeutic test, especially so if the basal metabolic test is not available. Under its administration, the patient will greatly improve if thyrotoxicosis is the correct diagnosis. The digitalis should not be discontinued.

It is not so hard for anyone to confuse the failing, fibrillating heart of hyperthyroidism with the failing fibrillating heart of mitral disease, because they both have a murmur and *may* both have a thrill. However, the thrill of mitral disease is always presystolic or diastolic in its timing, whereas the thrill of the hyperthyroid heart is always systolic in time. All sounds are loud and increased in the thyroid heart, and this may cause confusion when the examiner is focusing on the first sound, which is accentuated greatly in the case of the mitral stenosis. The history of the mitral case will show definite rheumatic disease as chorea, tonsillitis; and acute rheumatic fever as another important differentiating point.

Hypertension.—Hypertension is another disguise of the thyroid heart, and is also common in the elderly patient that is not suffering from an overactive thyroid. In this case help is found in the fact that the thyroid case tends more to increase the pulse pressure without raising the systolic pressure so very much. On the contrary, the hypertension case tends to increase the systolic pressure without so much increase in pulse pressure. This is especially true if the hypertension case has some renal background. The masquerade of hyperthyroidism can also parade under the disguise of angina pectoris, but this is not as common as heart failure, fibrillation, and hypertension.

Masked as Gastro-Intestinal Disease.—The well-trained gastro-enterologist has learned to look for both extremes of activity of the thyroid gland in all cases that present themselves with gastro-enterological symptoms, especially if the causal factor seems to be a little hidden and hard to find.

The gastro-intestinal tract is the next most common place, after the heart, for thyrotoxicity to show itself. This is well to remember when you stop to think that the thyroid case in the elderly patient can become very toxic, with no enlargement showing in the gland or exophthalmus presenting.

In this field the cases parade as enteritis, or possibly receive no diagnosis at all that is accurate. They often have short attacks of loose bowel movement, accompanied by emesis. The abdomen is sometimes tender generally, never localizing. There may be no tenderness at all. These cases are very weak and frequently show a rapid loss of weight. It is no wonder that the physician is often misled into thinking of carcinoma, gall-bladder disease, chronic enteritis, parasitosis, etc.

X-ray of the tract will be negative, but carcinoma can usually be ruled out by the fact that the loss of weight is accompanied by loss of appetite, and that meat and fatty foods are especially refused. In the loss of weight from thyrotoxicity the progressive loss goes on in spite of a voracious appetite. This fact alone should arouse one's suspicions and cause the taking of a basal metabolic rate.

Roger R. Morris, Taylor Professor of Medicine, University of Cincinnati, reports cases of hyperthyroidism masked by a normal or subnormal basal metabolic rate. He says in part: "It seems probable that these states are usually the result of a preëxisting stage, in which the basal metabolic rate has been elevated. As Reid ex-

presses it, the disease is 'burned out' so far as the increased oxygen consumption is concerned. The pathological physiology in these cases is obscure, but the relief of symptoms and frequent return of the basal metabolic rate to normal, from subnormal levels, indicate that disturbed function of the thyroid is at fault." He concludes that the basal metabolic rate is helpful when elevated, but should be disregarded in the presence of unmistakable evidence of thyrotoxicity. This is a little more true in the thyrotoxic heart than elsewhere. In view of these findings, the basal metabolic rate, relied upon too dogmatically, can be confusing. History and physical examination still are the prime factors in the practice of medicine, as of old. Taylor's report can be found in the International Clinics for September, 1933.

Symptoms That Help in the Clinical Picture.—The skin is filled with helpfulness in the thyrotoxic case. It is warm and moist. It has a peculiar salmon-pink color, due to pigmentation. These patients are always warmer than the average individual, and sleep with less over them than others in a like temperature. They perspire very freely and easily. The blood vessels of the skin are prominent and distended, while the pulse is bounding.

Even though the tremor is absent in these patients, which is seldom, still the overstimulation of the central nervous system is evidenced by restlessness and the quick, jerky movements of every act.

On physical examination, hyperthyroidism does not progress very far, until a bruit is heard over the thyroid. This is especially true in the exophthalmic case. In addition to this, sugar tolerance is increased and the vital capacity of the lungs is reduced. All of these things are helpful when one is trying to uncover the masked case of overactive thyroid.

Last of all, the response to iodin is most helpful. We are indebted to Plummer for pointing out that the administration of Lugol's solution would greatly improve these cases. It does it by increasing the colloid deposits, which in turn increases the pressure in the gland, which pressure tends to hold the thyroxin from escaping, thus reducing the toxicity of the patient. It is a splendid clinical test when in doubt, to simply put the patient at rest, and administer ten minims of Lugol's solution, three times daily.

Another helpful thing is the failure of the pulse rate to drop during sleep. All neurogenic tachycardias drop in rate with sleep, but the hyperthyroid case continues his toxicity both sleeping and waking, and the rate does not drop. There are many other helpful things to distinguish, but the limit of space in this article does not permit more extensive discussion.

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DIAGNOSIS

HILMAR O. KOEFOD, M. D. (1421 State Street, Santa Barbara).—In masked hyperthyroidism usually two of the cardinal signs of Graves's disease—exophthalmos and enlarged thyroid—are absent. The symptoms are primarily cardiac.

In diagnosing, probably the most important aid is to try to make an etiological diagnosis in every case presenting cardiac symptoms, and then to bear in mind that a definite, though proportionately small group of cases are due to thyrotoxicosis. The importance of making a correct diagnosis is obvious because, once made, therapy is so strikingly successful.

On account of the absence of exophthalmos and enlarged thyroid, and occasionally the rapid pulse, the diagnosis must be made on so-called secondary signs of hyperthyroidism. As more and more cases are reported, these gradually help to form a clearer picture in our minds. Symptoms as well as physical signs are important. The most common complaint is palpitation. This may be a simple tachycardia, which is more or less constant or comes on at varying intervals. Should this tachycardia be associated with extra systoles and no definite cause be found, thyrotoxicosis should be seriously thought of. If the palpitation consists of tachycardias, of absolute irregularity or of varying duration (paroxysmal fibrillation), thyrotoxicosis must be seriously considered. This applies also to cases of permanent fibrillation with unexplained etiology. It should be borne in mind that anginal pain associated with the onset of palpitation may be due to hyperthyroidism.

On examination the majority of patients are found to be of nervous temperament, with associated quick nervous movements. Often they have lost weight in spite of good appetites. A small group have been described as apathetic and obese. Flushing of the skin, perspiration and an unusual feeling of warmth are often present. A brownish pigmentation, most pronounced at the base of the neck, is frequently found. The importance of premature grayness, sleeplessness and irritable gastro-intestinal tract, have been emphasized by some writers. Most cases present a fine tremor of the hands. The thyroid itself may not be enlarged, but frequently is unusually firm, and on careful palpation may disclose a small nodule.

The heart itself gives the impression of being overactive. It is usually more rapid than normal, and on auscultation sounds much as after moderate exercise. Even if the rate is not rapid, the apex impulse is quick and forcible. The first sound at the apex is loud and short, not prolonged as in hypertension. Often the impression is gained that the heart is larger than x-ray studies show it to be.

The systolic blood pressure is often raised while the diastolic is but little changed. The increased pulse pressure suggests the possibility of thyrotoxicosis. Due allowance must be made for the increase of blood pressure that comes with age.

The basal metabolic rate is usually increased, and when found is of great help in making the diagnosis. Allowance for a slight increase in rate for cases of cardiac failure from other causes must be made. A group of cases with a basal rate below normal, but with other definite signs of hyperthyroidism, have been reported and have responded well to treatment.

Masked hyperthyroidism may be easily confused with mitral stenosis. They may both have an accentuated first sound, a murmur that may be easily thought to be presystolic, and the systolic shock may be suggestive of a thrill. A history of rheumatic fever, an enlarged left auricle on x-ray examination, a definite diastolic murmur at the apex, and a split P-wave in the cardiogram help to make the differentiation. If these are absent, and a number of secondary signs and symptoms mentioned above are present, masked hyperthyroidism is the probable diagnosis.

A very important aid in the diagnosis is the therapeutic: if a case of heart failure with or without fibrillation fails to respond to rest and digitalis, and is improved by 5 to 10 minims of Lugol's solution, three times a day, the diagnosis is clarified.

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PROGNOSIS AND TREATMENT

WILLIAM DOCK, M. D. (Stanford University Hospital, San Francisco).—The great importance of recognizing masked hyperthyroidism lies in the fact that the disorder is curable, and in many cases the speed of disappearance of cardiovascular signs and symptoms is extremely gratifying. Unlike the hyperthyroidism of younger persons, that which produces angina, cardiac failure, or chronic asthenia in the elderly does not fluctuate in intensity rapidly when untreated; and it is not often subject to long spontaneous remissions. Occasional cases, particularly in women with nodular goiter, do get completely well without medical management, or with a little iodin and rest. But in general the prognosis depends entirely on the type of treatment available. When no treatment or inadequate treatment is taken, the general course is downhill, with a slower or faster rate, depending on the amount of degenerative disease, of hypertension, and of physical and emotional stress as well as on the severity of the hyperthyroidism. Not infrequently the condition remains stationary for long periods, and severe intercurrent disorders—urinary tract infections, myocardial infarcts, etc.—may be withstood almost as well as by those free from thyroid disease. Until the thyrotoxic state is terminated, invalidism is more or less marked, and the risk of more serious or even fatal cardiac complications is always great.

When surgical treatment is deemed unsafe or inadequate, continuous administration of iodin (one-half to one cubic centimeter of 5 per cent potassium iodid solution daily) and intensive roentgen treatment over the thyroid gland must be considered as palliatives which, in 20 to 30 per cent of cases, bring about a satisfactory regression of thyroid overactivity within a few months. The removal of as much thyroid gland as possible, by an experienced surgeon, is still the most rapid and successful method of combating hyperthyroidism; and when the patient is prepared and continuously treated with iodin for three months after operation, relapse or continuation of hyperthyroidism occurs in less than 5 per cent of the cases. Postoperative hypothyroidism should be treated with thyroid tablets by mouth; and as this may be needed for years the least troublesome method should be used. Two grain U. S. P. tablets, taken in the morning, either two, four, or seven times a week, as determined by the response of the patient's symptoms, are quite safe, and are just as effective as smaller doses given two or three times daily.

Congestive failure and auricular fibrillation in thyrotoxic patients are treated in the usual way. Digitalis and diuretics are sometimes nearly as effective as in cardiacs without thyroid disease. Although digitalis is always ineffective in slowing the thyroid-driven pace-maker of the heart, it does slow the fibrillating heart in many instances nearly as well as in cases of simple mitral or degenerative heart trouble. Nausea and diarrhea, so common in severe cases, respond fairly well to full doses of phenobarbital, and to dry diet of well-cooked cereals, rice and potatoes. Caprices of appetite are common, and should be humored. Patients unable to hold down a simple and particularly soft or liquid diet, may do well on such articles as salami or graham crackers.

In preparation for operation, or in managing those rare cases unsuited for operation, complete quiet, sedatives, and a high caloric diet are the important features. Iodin produces its maximal effects in seven to twenty days, and dosage (if over 10 milligrams a day) or form of administration seem of little importance. When surgical treatment seems probable, but is not immediately available, iodin should be withheld until just before operation rather than be given early. While some patients respond over and over to iodin, some only do so the first time, and the thyrotoxic state may be nearly as severe a month or six weeks later as it was before starting iodin. In a disease which responds so well to ideal treatment, half-measures, partial operations, inadequate preparation and after-care are almost as tragic and even more inexcusable than failure to make a correct diagnosis.

Gestation and Acute Appendicitis. — The recognition of appendicitis during gestation is comparatively difficult, because its symptoms are readily mistaken for the molimina of pregnancy and it is understandable that only severe cases are observed. This fact induced Fátyol to describe the seven cases that came under his observation. After giving the case histories, he discusses their diagnostic difficulties and particularly their differentiation from inflammations of the uterine adnexa, torsion of the pedicle of cystic tumors, extrauterine pregnancy, pyelitis gravidarum and cholelithiasis. The unfavorable prognosis of appendicitis during pregnancy is due to the fact that perforation is more likely. The treatment should be less conservative than is the case if there is no pregnancy; that is, surgical treatment should be resorted to even if the symptoms are not severe. This applies particularly to the second half of pregnancy, whereas during the first few months the rules of surgery should be followed. The prospects of preserving the gestation are better when surgery is resorted to within the first forty-eight hours after the attack. Early recognition of the appendicitis is of vital importance for mother and fetus.—*Zeitschrift f. Geburtshülfe u. Gynäkologie.*